

CLAIMS:

1. A method for calibrating a lithographic projection apparatus comprising:
identifying a set of two or more reference positions of an object table with a first detection system and measuring the reference positions with a first position measuring system;
identifying the same set of reference positions of said object table with a second detection system and measuring those reference positions with a second position measuring system; and
correlating said first and said second position measuring systems using the measurements of the reference positions.
2. A method according to claim 1, wherein said set of reference positions are identified by detecting at least two marks provided to said object table.
3. A method according to claim 1, wherein said set of reference positions are identified by detecting at least two marks on a workpiece held by said object table.
4. A method according to claim 2, wherein said mark is a diffractive mark whose position is detected by directing a detection beam of radiation to said diffractive mark and measuring the intensity of sub-beams diffracted from said mark with an intensity detector such that the intensity detected by the intensity detector comprises an indication of the position of the mark with respect to that detector.
5. A method according to claim 1, wherein said set of reference positions are identified by detecting an aerial image of a mark by at least two image sensors provided to said object table and adapted to detect an aerial image of a mark.
6. A method according to claim 5, wherein said aerial image generated with a mark with a particular pattern is scanned over an image sensor comprising a similar pattern located on top of a light intensity detector such that the intensity detected by the intensity detector comprises an indication of the position of the aerial image with respect to said image sensor.

7. A method according to claim 1, wherein said position measuring system comprises an interferometer system.
8. A method according to claim 1, wherein said calibration method is applied for every substrate processed in that apparatus.
9. A method according to claim 1 wherein said lithographic projection system includes a radiation system comprising a radiation source.
10. A lithographic projection apparatus comprising:
- a radiation system to supply a projection beam of radiation;
 - a first object table to support patterning structure, the patterning structure constructed and arranged to pattern the projection beam according to a desired pattern;
 - a second object table to hold a substrate; and
 - a projection system to project the patterned beam onto a target portion of the substrate;
 - a first position measuring system to measure a position of one of said first and second object table;
 - a first detection system to identify a reference position of said one object table within a range of said first position measuring system;
 - a second position measuring system to measure a position of said one object table;
 - a second detection system to identify a reference position of said one object table within the range of said second position measuring system; and
 - a processor in communication with said first and said second position measuring system and said first and said second detection system, the processor being configured and arranged to correlate measurements of said first and said second position measuring system.